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Toshiaki Mizoguchi

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EXAMINER

SHEVIN, MARK L

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,950	Applicant(s) MIZOGUCHI ET AL.	
	Examiner MARK L. SHEVIN	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 5-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/18/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 1 and 5-9, filed June 23rd, 2009 are pending. Claims 1 and 5-8 are amended and claims 2-4 are cancelled.

Acknowledgement of RCE

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 23rd, 2009 has been entered.

Information Disclosure Statements

3. The information disclosure statement (IDS) submitted November 18th, 2008 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner. Please refer to applicants' copy of the 1449 form submitted herewith.

However, the non-patent literature document "Chinese Office Action dated July 18th, 2008..." has not been considered as no English translation has been provided.

Status of Previous Rejections

4. The previous rejections of claims 1-3 and 8-9 under 35 U.S.C. 103(a) over Ishiguro (JP 52-070918) in view of Nakato (US 6,120,578) in the Office action dated August 12th, 2008 have been withdrawn.

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5. The previous rejections of claims 4-7 under 35 U.S.C. 103(a) over Ishiguro in view of Nakato and Nabeshima (EP 906,960 A1) in the Office action dated August 12th, 2008 have been withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

6. **Claims 1 and 5-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tosaka** (US 6,221,180 B1).

Tosaka

Tosaka provides steel for cans having a satisfactory surface appearance with a composition (elements all in weight percent unless otherwise indicated as ppm) as shown in the comparative table below:

Element	Tosaka	Instant claims 1, 5, and 6
C	0.005 – 0.1	0.0005 – 1.5
Si	0 - 0.1	0.005 – 1.2
Mn	0.05 – 1	0.05 – 3.0
P	0 – 0.04	0.001 – 0.1
S	0 – 0.01	0.0001 - 0.05
Al	0.001 – 0.01	0.005 – 1.5
O	0 – 0.1 (pref. less than 0.005)	0 – 0.008
REM	Ca+REM: 0.0005 – 0.01	0.00001 – 0.001

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Cu	0 – 0.2	0.1 – 1.5
Ni	0 – 0.2	0.1 – 10
Cr	0 – 0.2	0.1 – 10
Mo	0 – 0.1	0.05 – 1.5
Nb	0 – 0.1	0.005 – 0.1
V	0 – 0.1	0.005 – 0.3
Ti	0.015 – 0.1	0.001 – 0.25
B	0 – 0.01	0.0005 – 0.005
Fe	Balance	Balance

REM means rare earth metals such as La and Ce (col. 9, lines 45-55). The steel includes oxidic inclusions having a grain diameter of 1 to 50 μm (col. 3, lines 65-67) with 20 – 90 wt% Ti-oxides, 10 – 40 wt% of Ca-oxides and/or REM-oxides, and 0 - 40 wt% of Al_2O_3 (col. 4, lines 1-5). Furthermore, preferably 80 wt% or more of the oxidic inclusions have a grain diameter of 1 to 50 μm (col. 11, lines 41-46).

Regarding claims 1, the preamble of claim 1 states a steel “prepared by casting liquid steel deoxidized with Al, including one or more rare-earth metals (REMs)...” and marks the instant claim as a product-by process claim.

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is

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unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

The Patent Office bears a lesser burden of proof in making out a case of *prima facie* obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974).

As there is no structure implied beyond the alumina cluster composition and base steel compositions claimed, once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

Tosaka discloses "alumina clusters" in that his steel includes oxidic inclusions having 0 - 40 wt% of Al_2O_3 (col. 4, lines 1-5) and Tosaka's base steel composition overlaps each and every claimed element of C, Si, Mn, P, S, Al, O (total), and Fe as shown in the previous table. Furthermore, Tosaka's oxidic inclusion composition overlaps the claimed alumina cluster composition of alumina and 0.5 - 15 wt% REM-oxide.

Also, Tosaka discloses an overlapping range of total REM but is silent as to the content of dissolved REM. However, one of ordinary skill in steelmaking would have reasonably expected that Tosaka's steel would have an overlapping range of dissolved REM as Tosaka's product has overlapping compositions of the base steel (including

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REM content) and alumina clusters and thus the solubility of REM would be assumed to behave the same as in the case of the instant product as claimed by the instant claims.

Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Furthermore, from MPEP 2112, para. V, subpara 1: "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on 'inherency' under 35 U.S.C. 102, on '*prima facie* obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same..." The burden of proof is similar to that required with respect to product-by-process claims. *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

It would have been obvious to one of ordinary skill in steelmaking, at the time of the invention, to select any portion of the claimed ranges, including the claimed ranges, (base steel composition, alumina cluster composition) from the overlapping ranges disclosed in Tosaka because Tosaka finds that the prior art composition in the entire disclosed ranges has a suitable utility and the normal desire of scientists or artisans to

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improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."; *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). From MPEP § 2144.05: In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). In addition, "[A] prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness." *In re Peterson*, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir. 2003). Also see, *In re Geisler* 43 USPQ 2d 1365 (Fed. Cir. 1997) and *In re Malagari*, 182 USPQ 549, 554 (CCPA 1974).

With respect to the compositional formula $0.05 \leq \text{REM/T.O.} \leq 0.5$, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357,553 O.G. 177., 57 USPQ 1 17, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75.

Regarding claims 5-7, it would have been obvious to one of ordinary skill in steelmaking, at the time of the invention, to have chosen the instantly claimed ranges of one or more of Cu, Ni, Cr, and MO; one or more of Nb, V, and Ti; and B for the same reasons as stated in the rejection of claim 1, *supra* (see MPEP 2144.05).

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7. **Claims 8 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tosaka** (US 6,221,180 B1), as applied to claims 1 and 5-8 above, in further view of **Mizoguchi** (EP 1,029,938 A2).

The disclosure of Tosaka was discussed above, however Tosaka does not explicitly disclose the maximum size of the alumina cluster or the number of alumina clusters in the steel.

Mizoguchi:

Mizoguchi discloses a rolled steel having few inclusion defect suitable for sheet sheets used for automobiles, deeply drawn cans, and steel pipes.

It is preferable that the maximum diameter of the oxide inclusions obtained by slime extraction is less than 300 μm and that there are no more than 50 pieces/kg of oxide inclusions with diameters greater than 38 μm (para 0008). By limiting the oxide size and minimizing the number of inclusions pieces per kilogram, there is little possibility that oxide inclusions are drawn out in rows in the rolled steel and this results in few inclusion defect (para 0025).

Regarding claim 8, it would have been obvious to one of ordinary skill in steelmaking, at the time of the invention, to select any portion of the claimed range, including the claimed range, from the overlapping range of Mizoguchi and thus optimize the maximum size of alumina clusters present in Tosaka within the range disclosed by Mizoguchi (see MPEP 2144.05 and optimization of range in claim 1, *supra*) as Mizoguchi teaches that limiting the maximum size of such alumina clusters results in few inclusion defects as there is little possibility that oxide inclusions are drawn out in

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rows in the rolled steel (para 0025). Furthermore, Mizoguchi's teachings are directed to steels used for deeply drawn cans; precisely the end to which Tosaka's steels are designed. Lastly, Tosaka disclosed preferably that 80 wt% or more of the oxidic inclusions have a grain diameter of 1 to 50 μm (col. 11, lines 41-46), which provides more motivation to limit the maximum size of inclusions to below 100 μm as Tosaka prefers the vast majority of the inclusions in his steel to be within the claimed range.

Regarding claim 9, would have been obvious to one of ordinary skill in steelmaking, at the time of the invention, to select any portion of the claimed range, including the claimed range, from the overlapping range of Mizoguchi and thus optimize the number of alumina clusters in the steel of Tosaka within the range disclosed by Mizoguchi for the same reasons and expected benefits as stated in claim 8, *supra*. Furthermore, Mizoguchi's teaching of less than 50 pieces/kg implies that the number of alumina clusters should be minimized, as is the case with instant claim 9.

Response to Applicant's Arguments:

8. Applicant's arguments filed June 23rd, 2009 have been fully considered but they are moot in view of the withdrawal of the previous rejection and application of new rejections in the instant Office action.

Conclusion

-- Claims 1 and 5-9 are rejected
-- No claims are allowed

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The rejections above rely on the references for all the teachings expressed in the texts of the references and/or one of ordinary skill in the metallurgical art would have reasonably understood or implied from the texts of the references. To emphasize certain aspects of the prior art, only specific portions of the texts have been pointed out. Each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combinations of the cited references may be relied on in future rejections in view of amendments.

All recited limitations in the instant claims have been met by the rejections as set forth above. Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. § 1.121; 37 C.F.R. Part §41.37 (c)(1)(v); MPEP §714.02; and MPEP §2411.01(B).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark L. Shevin whose telephone number is (571) 270-3588 and fax number is (571) 270-4588. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy M. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Mark L. Shevin/
Examiner, Art Unit 1793

August 21st, 2009
10-521,950

/George Wyszomierski/
Primary Examiner
Art Unit 1793